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HYDROLOGIC SIGNIFICANCE OF FAULTS
IN THE GREAT SMOKY MOUNTAINS
NATIONAL PARK

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Prepared for: Lyndon B. Johnson Space Center
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TITLE: The Hydrologic Significance of Faults in the Great
Smoky Mountains National Park.

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OBJECTIVE OF STUDY: To determine the feasibility of mapping faults on S-190 photography of the Great Smoky Mountains National Park and to determine the correlation between lineations and ground water.

PROGRESS AND OVERALL STATUS: No significant progress toward the objectives can be made until S-190 data are received for the test site. However, all so-called "pre-launch" preparations have been completed, and overall project status is essentially on schedule.

Several base maps at different scales have been obtained, as have recent geological, geophysical, and hydrological reports and maps.

High altitude aerial photos over the test site were received from NASA (Houston). These photos will be used as a form of ground truth to check the location and nature of lineations (which are visible on S-190 photographs), to plan field work on the ground, and to make a preliminary selection of sites for test drilling. The aerial photos are good quality and should prove useful for the intended purpose.

Standards and specifications for a test-drilling contract have been written. Further work on this phase of the project must await preliminary data analysis.

REQUIRED DECISIONS AND ACTIONS: None, at present. The study, as proposed, assumed that photographs of the test site would be obtained by SKYLAB 2. However, since the project represents a part-time effort by the two investigators, a delay until SKYLAB 3 or 4 does not represent a real delay in completing the study as presently scheduled.

EXPECTED ACCOMPLISHMENTS IN NEXT QUARTER: Further progress is dependent on obtaining S-190 data for the test site. When these data are received, the so-called "first look" phase of the study will be activated.

SIGNIFICANT RESULTS: None.

SUMMARY OUTLOOK: An ERTS frame (1084-15431) of the test site shows a number of excellent lineations. There is every reason

to believe, therefore, that the project can be completed as proposed.

TRAVEL SUMMARY AND PLANS: None, at present.

MISCELLANEOUS: None.